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Mr. William Caton
Acting Secretary
Federal Communications Commission
1919 M Street, NW, Room 222
Washington, DC 20554

Re: PR Docket No. 93-61 - Automatic Vehicle Monitoring

Dear Mr. Caton:

The staffs of the Private Radio Bureau and the Office of Engineering and Technology have recently asked Pinpoint Communications, Inc., for its views on a proposed resolution of the issues in PR Docket No. 93-61. The proposal, which was presented orally, is outlined in the attachment to this letter. While Pinpoint continues to review the proposal, it has the following initial comments on it.

Bandwidth for Wide-Area Automatic Vehicle Monitoring (AVM)

A plan that would permit wide-area multilateration AVM to spread its signal across 10 MHz of spectrum that is shared with local-area AVM would provide a basis for constructing a high capacity AVM system that could time share with other wide-area AVM systems. Such a plan would be significantly less desirable from the standpoint of service to the public than other proposals advanced by Pinpoint in this proceeding. These would have permitted a wide-area signal to spread over as much as 16 MHz in a shared environment.

The staff proposed to place wide-area systems on a secondary basis to local-area AVM in the central 10 MHz (910-920 MHz) may produce significant coordination problems. While Pinpoint believes that its wide-area system and local-area technologies can coexist so that both systems are able to meet their intended purposes, the coexistence has heretofore been premised on mutual cooperation between two

licensees. Under the staff's proposal, there is a serious question as to whether the cooperation needed to resolve any compatibility issues would exist. Co-primary status among licensees carries with it a mutual obligation. This obligation also acts as an incentive for the licensees. The staff's proposal would eliminate those incentives. Pinpoint continues to study the feasibility of operation on a secondary basis to local-area AVM.

Pinpoint questions the proposed six MHz exclusive set asides. While the record in this proceeding reflects disagreement as to whether it is feasible for the various AVM technologies to share spectrum, it has become increasing apparent that at least two types of sharing are possible. Time sharing can work with multiple systems. Spatial diversity sharing of the sort proposed by Teletrac in its ex parte in January of this year can also apparently work, with at least two systems. The public can be better served if both concepts are given a chance to prove their worth in the marketplace.

The staff has indicated that the exclusive 6 MHz set asides would be auctioned. While auctions are an appropriate mechanism in many cases for assigning licenses in virgin spectrum (or spectrum that is to be cleared), the 902 - 928 MHz band is neither virgin spectrum nor is it likely to be cleared of all existing and future users. As a result, it will be extremely difficult for prospective bidders to value the spectrum. Moreover, there are significant technical questions as to how a wideband signal would be limited within the band. The question of sideband attenuation will assume even greater importance in considering whether those systems that are primarily intended for high capacity AVM can provide robust and efficient service if their emissions are tightly confined within the six MHz sub-band.

The auction mechanism also calls into question the feasibility of licensing of wide-area AVM systems to state and local government bodies. Pinpoint has found that municipalities are especially interested in wide-area AVM technology. There is an understandable reluctance to give up direct control of radio systems that will play a critical role in public safety operations. Shared use of the band for wide-area AVM can address these concerns. Pinpoint believes that it is possible for local government entities to hold licenses for wide-area AVM and to operate on a time-shared basis with other service providers in the band. Auctioning of a significant portion of the available spectrum in this band would effectively preclude such licensing to local government entities.

Part 15 Operation

The staff proposal would define harmful interference to wide-area AVM operating in the 904 - 910 and 920 - 926 MHz sub-bands to be capable of occurring *only* whenever the Part 15 operations meet one or more of the following criteria:

1) Operates with an outdoor antenna 5 meters or more above ground level;

2) Operates as a field disturbance sensor (i.e., per Section 15.245); or

3) Operates with a directional antenna having >6 dBi of gain and produces more than 4 watts eirp.

If the Part 15 operation meets one or more of these criteria, it is to be deemed capable of causing harmful interference to the wide-area AVM system and thus must eliminate the harmful interference if the wide-area AVM licensee complains. Other Part 15 operations would be deemed **incapable** of causing harmful interference.

While the Commission has the authority under the Communications Act to define "harmful interference," the staff proposal is a significant departure from long-standing interpretations heretofore offered of the obligations of Part 15 operations under the existing rules. For example, this proposal would permit a 4 watt eirp device in a window on the twentieth floor of an office building to interfere with a wide-area AVM site on an adjacent roof with impunity. Under the staff proposal, the Part 15 device would clearly enjoy rights superior to the AVM system.[1] As such, Pinpoint does not support such a requirement and questions whether adoption of it is consistent with the Communications Act and the Administrative Procedure Act, particularly absent further notice and comment.

Making wide-area AVM "co-equal" to Part 15 in the proposed 10 MHz sub-band also raises significant issues of both procedure and substance. The Pinpoint system is robust. It is not bulletproof. In the case of the vast majority of unlicensed devices, Pinpoint expects no interference. Thus, it may well be that different interference criteria in various sub-bands would be appropriate. Part 15 operation, to a far greater extent than licensed operation, presents problems of coordination. With licensed systems, in contrast, each licensee knows where the other will be or is located by consulting a database. Moreover, Part 15 runs the gamut from those systems with little potential for interaction, such as much of the automatic meter reading technologies with low antenna heights and low duty rates, to high duty rate systems with relatively high powers and high antenna locations. With no obligation whatsoever to work toward a resolution of interference to the wide-area AVM system, there are deployment scenarios for unlicensed devices that could destroy the operation of any wide-area system. There is less variety and more predictable deployment of local-area AVM than with unlicensed devices. Thus, while Pinpoint believes that the issue of harmful interference between Part 15 and wide-area AVM should be addressed more

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[1] Ironically, in this and in any other circumstances, amateurs would be primary to Part 15, Part 15 would be primary to wide-area AVM, and wide-area AVM would be primary to the amateurs.

definitively, it does not believe that simply specifying that licensed and unlicensed are "co-equal" -- and must therefore accept interference from each other -- will likely work out well for either category of user.

Conclusion

Pinpoint commends the Commission's staff for initiating a dialogue with the parties. The time for such discussions is ripe. However, the overall staff proposal as explained to Pinpoint does not provide a sound basis for its adoption in a report and order. Pinpoint has previously offered band plans that would reasonably accommodate the competing interests in this proceeding as expressed in the record and permit the Commission to adopt a report and order based thereon. Nevertheless, should the Commission believe that other band plans and a redefinition of the rights and obligations of unlicensed users is necessary, further notice and comment should be sought formally.

An original and one copy of this letter is being filed as required by Section 1.1206(a)(1) of the Commission's rules on *ex parte* communications.

Respectfully submitted,

Edward A. Yorkgitis, Jr.
Attorney for Pinpoint
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Enclosure

cc: See attached list

FCC Staff Proposal

The following summarizes the oral proposal made by the FCC staff. The concept advanced by the PRB and OET staffs calls for a band plan that would have the following conditions:

902 - 904 MHz	Local area AVM with Part 15 secondary
904 - 910 MHz	Wide area multilateration AVM with Part 15 secondary in accordance with the conditions laid out below
910 - 920 MHz	Local area AVM with Part 15 secondary; wide area multilateration AVM is secondary to local area AVM and "co-equal" with Part 15
920 - 926 MHz	Wide area multilateration AVM with Part 15 secondary in accordance with the conditions laid out below
926 - 928 MHz	Local area AVM with Part 15 secondary

The two six MHz bands would be auctioned according to the staff.

In re Part 15: The FCC would define harmful interference to wide area AVM operating in the 904 - 910 and 920 - 926 sub-bands to be capable of occurring whenever the Part 15 operations met one or more of the following criteria:

1) Operates with an outdoor antenna 5 meters or more above ground level;

2) Operates as a field disturbance sensor (i.e. per Section 15.245); or

3) Operates with a directional antenna having >6 dBi of gain and produces more than 4 watts eirp.[1]

If the Part 15 operation meets one or more of these criteria, it is to be deemed capable of causing harmful interference to the wide-area AVM system and thus must eliminate the harmful interference if the wide-area AVM licensee complains. Other Part 15 operations would be deemed **incapable** of causing harmful interference.

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[1] Section 15.247 of the Rules now provides that antenna gain for spread spectrum devices is limited to 6 dBi unless the output power is reduced below 1 watt so as to limit the eirp to no more than would be produced using 1 watt into a 6 dBi gain antenna. This provision applies to all spread spectrum devices manufactured or imported on or after June 23, 1994. Thus, there is some unknown population of devices in inventory or in the field that exceeds the 6Bi limitation and would be presumed to cause interference in these sub-bands.

In the 910 - 920 MHz band, wide area multilateration AVM and Part 15 would each have to accept any interference received from the other. Both would have an obligation to avoid causing harmful interference to local area AVM.

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